

Microjaera morii, a new interstitial isopod from Japan (Crustacea: Asellota: Janiridae)

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ABSTRACT—*Microjaera morii*, a new species of the family Janiridae (Isopoda: Asellota) is described based on specimens collected from the mid-littoral zone of beach of Nagasaki Prefecture, Japan, as the second species of the genus. The present new species differs from its congener in having an ovate pleotelson, anteriorly projected frontal lobe of head, and a shorter pereonite 1.

KEY WORDS: *Microjaera*, interstitial isopod, Janiridae, Asellota, Taxonomy, Japan.

INTRODUCTION

Janiridae is one of the largest family in the suborder Asellota, of thirty genera and 185 species in the world (KENSLEY *et al.*, 2004). *Microjaera* was established by BOCQUET and LÉVI (1955) based on the Mediterranean species, *M. anisopoda*. Since then, *Microjaera* has remained a monotypic genus. A recent investigation yielded an undescribed species of the genus *Microjaera* from the interstitial zone of Nagasaki Prefecture, Kyushu, as the second species of the genus in the world.

MATERIALS AND METHODS

Sediments sample obtained by hand from the mid-littoral zone of gravel beach was washed in a plastic bucket, and the suspension decanted through a hand net with a pore size of 0.1 mm. The specimens retained were fixed and preserved in 70% ethanol. Each individual was dissected and appendages was mounted on glass microslides and observed using a differential interference contrast microscope. For SEM observation (Hitachi S-3000N), specimens were dehydrated through an alcohol series, freeze-dried, and sputter-coated with platinum. Total length was measured from the tip of the head to the end of the pleotelson.

The type series is deposited in the Kitakyushu Museum of Natural History and Human History (KMNH).

TAXONOMY

Microjaera morii sp. nov.
(Figs 1-4)

Material examined. Kawarakoba, Sanwa-cho, Nagasaki Prefecture, Japan, coarse sand, 23 October 2003, collected by Y. MORI: holotype, non-ovig. female, 1.43 mm (KMNH IvR 700,027); paratypes, 2 non-ovig. females, 1.22 mm (KMNH IvR 700,028), 1.34 mm (KMNH IvR 700,029).

Diagnosis.

Body (Figs 1A, 3A-D) slender, about 6 times as long as maximum width. Head (Figs 1A, 3A, C) frontal margin broadly projected. Pereonite 1 shorter than pereonites 2-7; posterior margin of pereonite 7 nearly straight. Pleonite (Figs 1A, 3A, B, F) short, dorsally invisible. Pleotelson (Figs 1A, 3A, B, F) ovate, about 1.4 times as long as wide, broader than pereonite 7; posterior margin rounded. Protopod of uropod (Fig. 1A; see Fig. 3E, F) more than 2/3 hidden in dorsal view on pleotelson; exopod about half as broad as endopod.

Description of holotype.

Head slightly longer than wide, laterally with a pair of simple setae; posterior margin of head convex. Pereonite 1 laterally with a pair of long simple setae; pereonites 2, 3 and 6 laterally with two pairs of simple setae; pereonites 4, 5 and 7 anterior-laterally with a pair of simple setae. Pereonite 1 shortest in all pereonites; pereonites 2-7 subequal in length. Pereonite 1 as wide as head; pereonite 2 slightly narrower than pereonite 1;

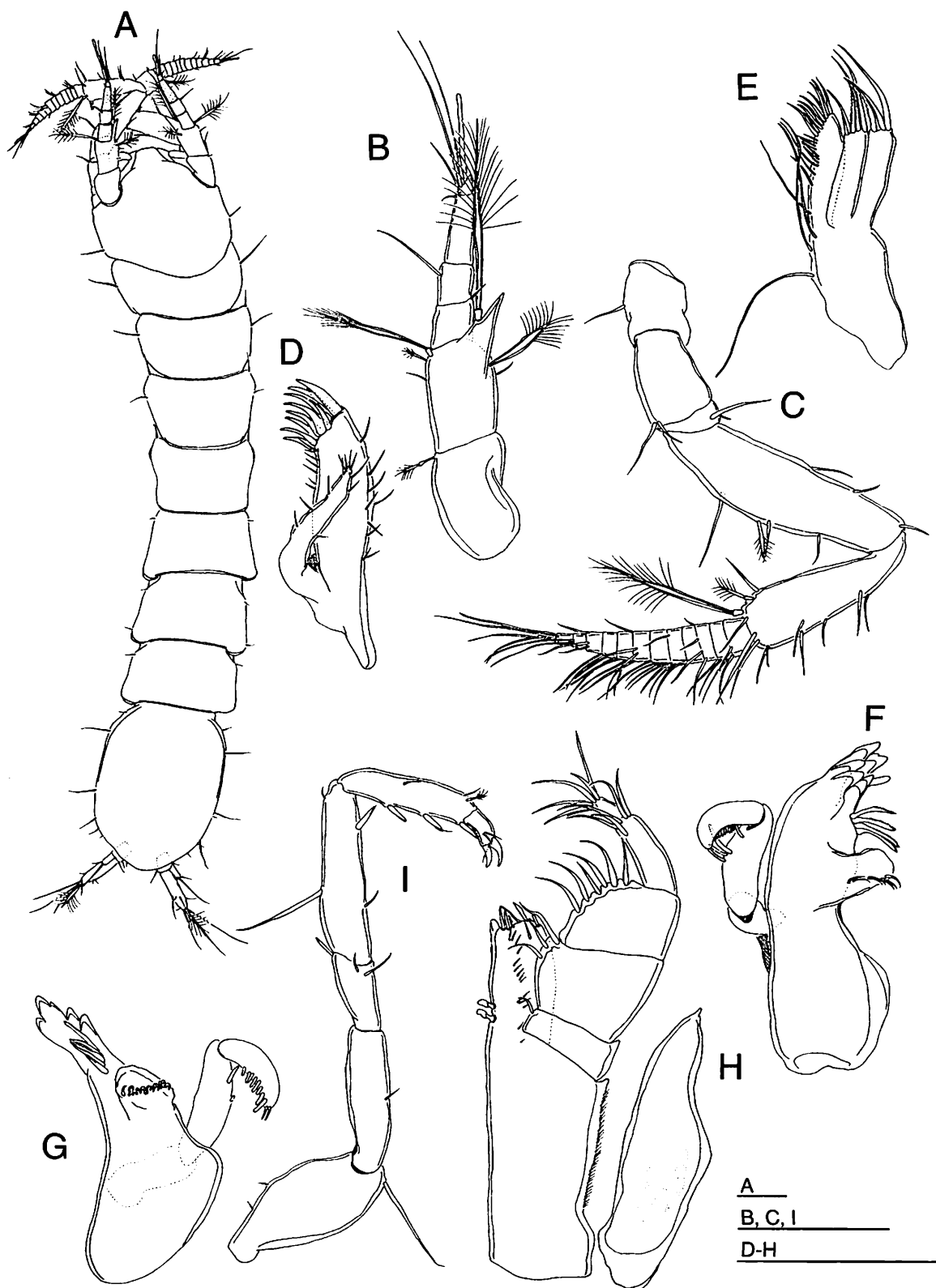


Fig. 1. *Microjaera morii* sp. nov. A-I, holotype female (KMNH IvR 700,027): A, habitus, dorsal; B, right antenna 1, ventral; C, right antenna 2, dorsal; D, left maxilla 1, ventral; E, left maxilla 2, ventral; F, left mandible, dorsal; G, right mandible, medial; H, left maxilliped, ventral; I, left pereopod 2, medial. Scales = 100 μ m.

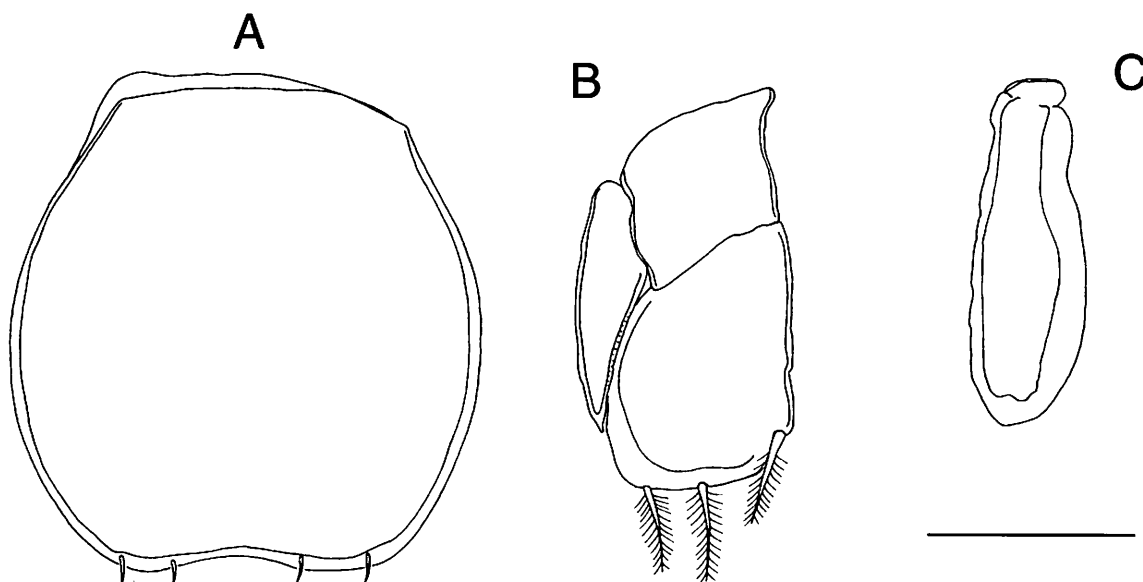


Fig. 2. *Microjaera morii* sp. nov. A-C, holotype female (KMNH IvR 700,027): A, operculum, ventral; B, right pleopod 3, ventral; C, right pleopod 4, dorsal. Scales = 100 μ m.

pereonites 3-7 trapezoidal, subequal in width. Pleotelson with 2 pairs of long and few short simple setae laterally, without dorsal setae.

Antenna 1 (Fig. 2B; see Fig. 4A): article 1 robust, medially winded, distal-laterally with 1 plumose seta; article 2 slightly longer than article 1, with distal-medial protrusion, bearing 1 long plumose seta arising from lateral side, laterally with 1 long and 1 short plumose setae and 1 simple seta, medially with 1 long plumose seta and 1 simple seta; article 3 about 1/3 as long as article 1, about half as broad as article 1, distal-medially with 1 short simple seta; article 4 as long as article 3, laterally with 1 long simple seta; article 5 about 1.8 times as long as article 4, distal-laterally with 1 short simple seta; article 6 smallest, apically with 3 simple setae and 1 aesthetasc.

Antenna 2 (Fig. 1C; see Fig. 4B, C): article 1 broader than long, distal-laterally with 1 simple seta; article 2 without setae; article 3 longer than articles 1 and 2, distal-laterally with 2 simple setae; article 4 shortest in peduncular articles, medially with 2 simple setae; article 5 longest, about 2.3 times as long as article 3, laterally with 3 simple setae, medially with 2 plumose and 2 simple setae; article 6 about 3/4 times as long as article 5, laterally with 7 simple setae, medially with 1 long and 1 short plumose setae and 1 simple seta, and with 3 simple setae distally. Flagellum composed of 12 short articles, as long as article 6 of peduncle, each with some simple setae.

Left mandible (Fig. 1F): incisor with 4 cusps; lacinia mobilis with 3 teeth; setal row with 4 setae; molar process stout, short, bearing 7 short setae. Palp of left mandible:

article 1 without setae; article 2 longer than article 1, with 2 lateral setae; article 3 about half as long as article 2, with many short lateral and 2 apical setae. Right mandible (Fig. 1G): incisor with 5 cusps; setal row with 5 setae; molar process stout, short, bearing 11 short setae. Palp of right mandible similar to that of left mandible in morphology

Maxilla 1 (Fig. 1D) with inner lobe bearing 11 short setae marginally; outer lobe apically with 10 stout simple setae, and with 9 lateral and 7 medial setae. Maxilla 2 (Fig. 1E) with inner lobe with 9 apical simple setae, medially with 4 long and 10 short simple setae; medial lobe apically with 1 pectinate and 4 simple setae; outer lobe apically with 1 pectinate and 2 simple setae.

Maxilliped (Fig. 1F; see Fig. 4C): article 1 of palp short, with 1 distal-medial seta; article 2 trapezoidal, broadest, about 2.7 times as long as article 1, with 3 medial setae; article 3 slightly broader and shorter than article 2, with 6 medial setae; article 4 narrow, about 3.3 times as broad as article 3, as long as article 3, with 3 distal-medial and 3 distal-lateral setae; article 5 narrowest, about 1/3 times as long as article 4, with 7 apical setae; endite as broad as article 2 of palp, bearing 6 distal and many ventral setae, and with many short fine setae laterally and 2 coupling hooks medially; epipod lanceolate, narrower than endite, with acute apex.

Pereopod 2 (Fig. 1G): basis robust, broadest, with 1 distal-ventral long and 2 dorsal short simple setae; ischium as long as basis, about 1.8 times as broad as basis, ventrally with 1 short simple seta; merus trapezoidal,

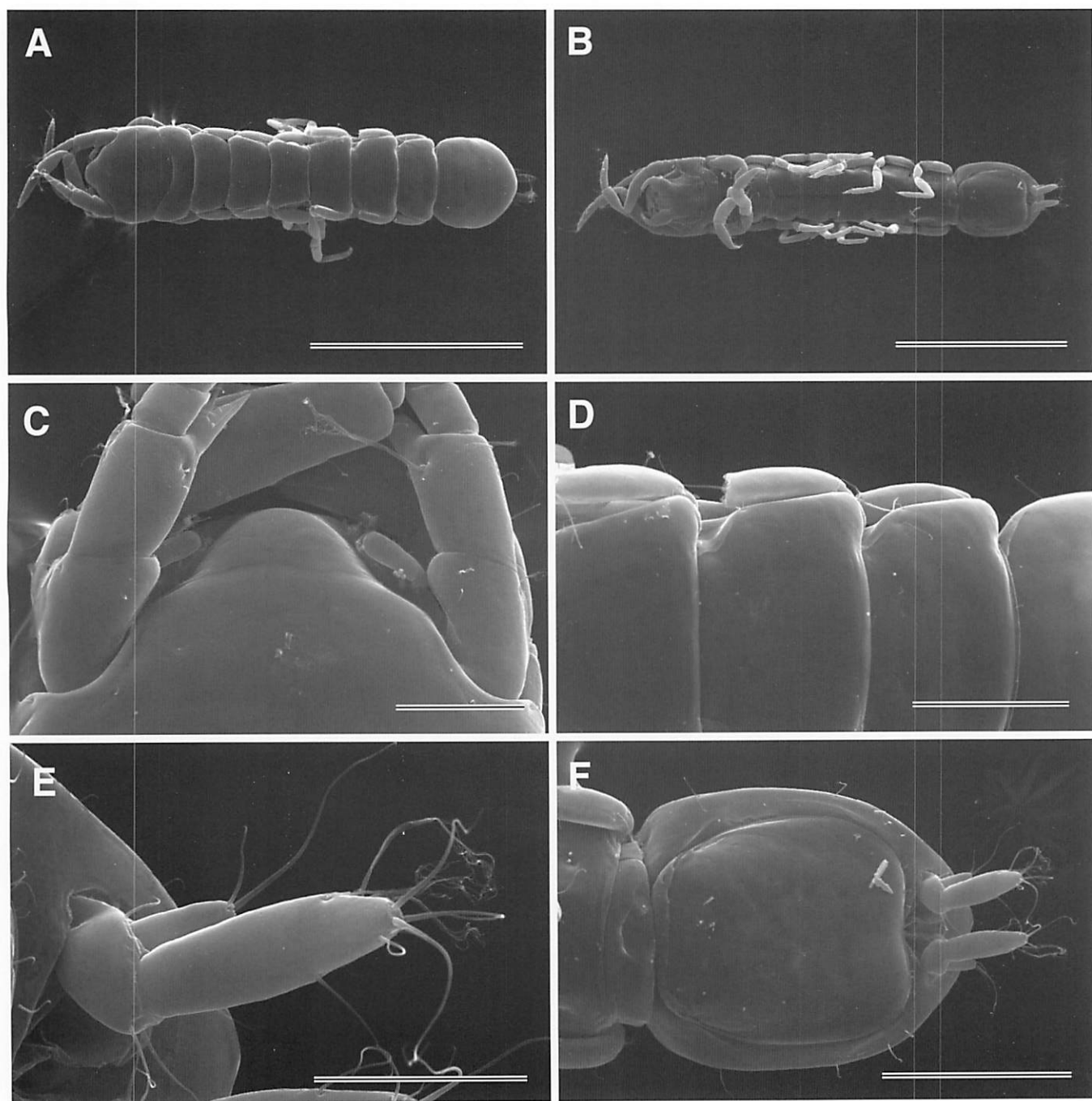


Fig. 3. *Microjaera morii* sp. nov. A, C, D, paratype female (KMNH IvR 700,028); B, E, F, paratype female (KMNH IvR 700,029): A, habitus, dorsal; B, habitus, ventral; C, anterior part of head, dorsal; D, pereonites 5-7 and pleotelson, dorsal; E, left uropod, ventral; F, pereonite 7, pleonite 1 and pleotelson, ventral. Scales = A, B, 600 μ m; C, E, 60 μ m; D, 120 μ m; E, 180 μ m.

about half as long as ischium, with 1 distal-dorsal robust sensory seta and 2 lateral simple setae; carpus longest, dorsally with 1 long and 1 short simple setae, ventrally with 1 robust sensory and 1 short simple setae; propodus shorter than basis, distal-dorsally with 1 plumose and 1 short simple setae, and with 3 ventral robust sensory setae and 1 lateral simple seta; dactylus narrowest, with 2

distal-lateral and 1 apical simple setae, 1 curved unguis, and 1 robust accessory spine.

Operculum (Fig. 2A; see Fig. 3F) as long as broad; posterior margin concave, with 2 pairs of short setae. Pleopod 3 (Fig. 2B): article 1 of endopod as long as broad, without setae; article 2 broader than article 1, bearing 3 stout plumose setae distally; exopod lanceolate, with acute

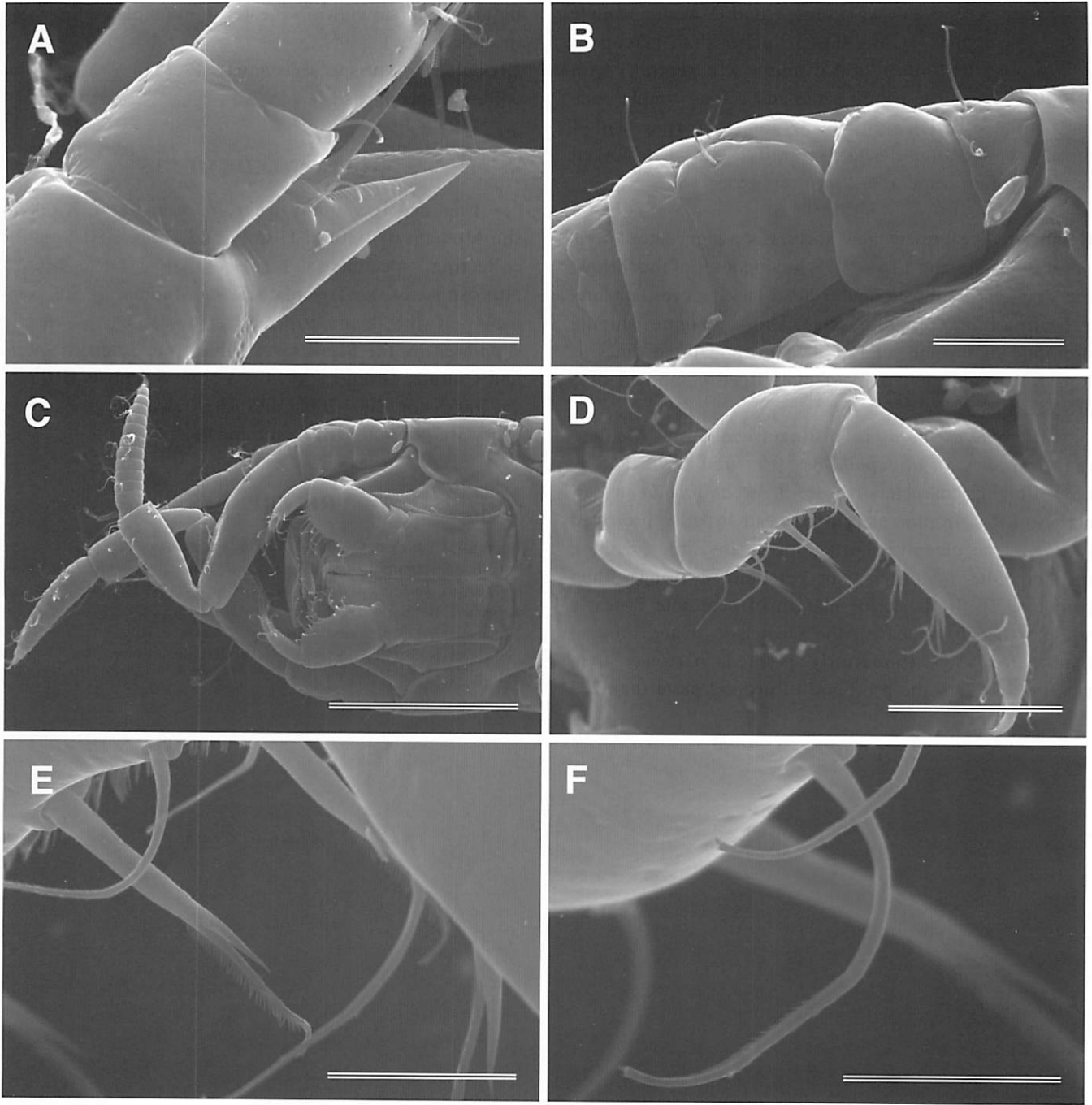


Fig. 4. *Microjaera morii* sp. nov. A, paratype female (KMNH IvR 700,028); B-F, paratype female (KMNH IvR 700,029): A, articles 2-4 of left antenna 1, dorsal; B, articles 1-4 of left antenna 2, ventral; C, maxilliped, antennae 1 and 2, ventral; D, right pereopod 1, lateral; E, setae on carpus, lateral; F, setae on propodus, lateral. Scales = A, B, 30 μ m; C, 180 μ m; D, 60 μ m; E, 18 μ m; F, 12 μ m.

apex. Pleopod 4 (Fig. 2C) uniramous, about 3.2 times as long as broad.

SEM observation of paratypes.

Two females were also examined with SEM (Figs 3, 4). Since most SEM micrographs complement the above description, only selected points are mentioned here.

Surface of body (Fig. 3A-D) smooth, without dorsal setae. Head (Fig. 3C): frontal margin swollen at middle. Pereonites 6 and 7 (Fig. 3D) distal-laterally concaved. Pleonite (Fig. 3F) hidden under pleotelson, dorsally invisible. Uropod (Fig. 3E, F): protopod with 1 lateral and 2 medial simple setae; exopod with 2 long simple setae apically; endopod apically with 1 plumose and 3 simple

setae, and with 3 lateral plumose and 2 medial simple setae. Pereopod 1 (Fig. 4D-F) thicker than pereopods 2-7: carpus with 1 distal-dorsal simple seta, ventrally with 3 bi-forked setulose robust setae and 5 long simple setae and setulated scales; propodus as long as carpus, with 1 distal-lateral setulose seta, ventrally with 2 bi-forked setulose robust setae and 2 setulose setae.

Remarks. The present new species is assigned to *Microjaera* BOCQUET and LÉVI, 1955, having a set of the following characters: subrectangular head lacking eyes, antenna 1 bearing long plumose setae, short pleonite, minute protopod of uropod, endopod of uropod three times as long as exopod, and palp of maxilliped composed of 5 articles.

Microjaera morii is distinguished from Mediterranean species *M. anisopoda* BOCQUET and LÉVI, 1955 by the following characters (those of *M. anisopoda* in parentheses): the frontal margin of head broadly projected (convex), the pleonite short, dorsally invisible (visible), the pereonite 1 shorter than pereonite 2 (longer than pereonite 2), the posterior margin of pereonite 7 nearly straight (deeply concave), the pleotelson ovate, broader than pereonite 7 (posteriorly pointed, narrower than pereonite 7), and the protopod of uropod more than 2/3

hidden in dorsal view on pleotelson (completely invisible in dorsal view).

Etymology. The species is named after Dr. Y. MORI, who collected specimens.

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Preface

The Kitakyushu Museum of Natural History and Human History hosted a travelling exhibition on the Early Cretaceous terrestrial biota of the Tetori Group of Central Honshu, Japan. This resulted from an ongoing collaborative study on the geology and palaeontology of the Tetori Group, which has extended over the past ten years. We decided to organize an international research symposium on this Early Cretaceous biota to mark this anniversary. The symposium took place on the 1st and 2nd September 2003. Fifteen papers on the Early Cretaceous Terrestrial biota of Europe, Mongolia, China, Korea and Japan were given by eighteen participants from the UK, Spain, US, China and Japan. The following five papers in this volume derive from the symposium. The symposium was partly funded by a Grant-in-Aid for Special Purposes by Japan's Ministry of Education, Culture, Sports, Science and Technology to Makoto MANABE, no. 12800018.

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